FREEWIRE

FreeWire Technologies
California Energy Commission Rural EV Charging Grant
Monterey County Proposal
September 30, 2022

Dear County of Monterey,

FreeWire Technologies appreciates your interest in our battery integrated DC ultrafast charger, Boost Charger 150, and is proud to provide this proposal in response for your consideration.

With a 160kWh integrated battery and 150kW charge output, Boost Charger 150 delivers many advantages that exceed traditional DCFCs:

- Installation: Significant cost reduction and location flexibility due to lower power/infrastructure requirements. Boost can be installed and ready for use within one day (on a prepped site)
- Power Requirements: Only requires 208V or 240V input power (**no need for 480V power**). Increased distance potential from transformers.
- Grid Impact – Predictable load impact due to our 27kW maximum power draw allowing the existing grid to provide ultrafast charging speeds while providing mitigation of demand charges for the owner and operator.
- Small footprint (40" X 43"): space efficient design means no unsightly and expensive electrical infrastructure
- Energy management: unlock additional cost reduction and revenue opportunities through our advanced control and operating system.

FreeWire has been thrilled with the launch, response, and strategic partnerships related to the Boost Charger and hopes the County incorporates it as part of an innovative EV charging strategy.

Sincerely,

Jordan Baroody
Sales Director, State & Local Gov't
FreeWire Technologies
jbaroody@freewiretech.com
530-681-6736

Executive Summary

Founded in 2014, FreeWire is a leading US-based provider of turnkey & fully integrated electric vehicle (EV) charging solutions. FreeWire's technologies are addressing electrification holistically to help reduce the overall costs of electrification, not just for vehicle owners but for businesses and the energy system. By siting batteries at the grid edge, and utilizing existing infrastructure to repower them, FreeWire's products can provide resiliency solutions while minimizing total cost of deployment and ownership related to EV charging solution.

FreeWire has grown rapidly thanks to high demand for its products in the EV charging and energy infrastructure industry. The company has grown from two employees at the start of 2014 to over 150 employees today. FreeWire was previously headquartered in a former Dodge/Chrysler manufacturing facility in San Leandro, CA, within a disadvantaged community (DAC). In the past year, FreeWire has expanded its manufacturing footprint and output, and more than doubled the size of its offices and R&D facilities.

FreeWire received a CEC Advanced Manufacturing grant in 2019 and has received over $200 million in total funding to date. FreeWire is backed by world-class venture capital firms and global Fortune 500 companies, including Black Rock Financial Management, Inc., Riverstone Holdings, bp Ventures, ABB, and Macquarie Capital, amongst others.

FreeWire has been operating for eight years, primarily manufacturing mobile Level 2 chargers and electric generators. The ultrafast battery-integrated EV chargers, Boost Charger, was introduced in 2020 and has been deployed across 12 US states and in the UK and Japan. By the end of 2022 Boost Charger will be deployed in more US states, and in Canada, Australia, New Zealand, and other European countries. Key customers include bp, Google, LinkedIn, Netflix, LADWP, SMUD, SRP, AEP and many others. The Boost Charger and its integrated battery are fully UL certified and have undergone testing at EPRI, which has verified the performance and cost reduction benefits of the technology.

FreeWire is dedicated to accelerating the deployment of EVSE by reducing the barriers to installation and the high energy cost of operating chargers. FreeWire accomplishes this by integrating battery storage technology into its Boost Charger, which reduces the need for make-ready infrastructure and reduces the grid impact of charging vehicles. Boost Charger provides a charge to the vehicle directly from the FreeWire battery using a low power input, as opposed to conventional chargers, which pull power directly from the grid at high power. This enables Boost Charger to deliver high power output to vehicles while dramatically lowering the energy costs of charging - a significant benefit to site hosts, grid operators, ratepayers, and EV drivers alike.

Core Proposal

FreeWire Technologies is excited to provide information on our Boost DC Fast Charging station for Monterey County to purchase as a part of our successful proposal with the California Energy Commission Rural EV Charging grant program.

As a part of the grant project scope, FreeWire Technologies will provide solutions for DC Fast Charging (DCFC), consisting of our Boost charging equipment, network services, warranty (labor and parts), installation & commissioning support, project management, charger shipping, accessories, co-branding, installation mounting templates, and site assessment services. We have provided initial site reviews and recommendations for the placement of our charger along with guidance for ADA compliance, as required for the Grant. The proposed scope and project costs are listed below in this proposal for consideration by Monterey County.

Project Sites:

Site Address	County	Site Description	Low-Income Community (Y/N)
54692 Teresa St, San Lucas, CA 93954 (Corner of Teresa St. and Main St.)	Monterey	Public library / Emergency Operations Center	Yes
11160 Spiegel, Castroville, CA	Monterey	Public library / Emergency Operations Center	Yes
315 El Camino Real, Greenfield, CA	Monterey	Public library / Emergency Operations Center	Yes

Project Budget and Grant Award – 5 Year Warranty

Scope: Each location includes scope for (1) Boost 150 Charger and (1) L2 charger. Installation and engineering costs are estimated and will be further refined upon contractor selection and final site walk. L2 Charger pricing is based on BTC Power / EV Connect charger models and networking fees are based on 5 Year term software license for EV Connect per Boost charger.

If Monterey County elects to purchase, own, and operate the Boost Chargers, the County will be responsible for the following project costs but also receive the full grant funding award to help offset those costs. The County may choose the installation contractor and level 2 hardware to purchase directly. The County would also buy the FreeWire Boost Chargers from directly FreeWire as quoted on the following page. **The pricing below has also been updated to include installation, L2 hardware, and shipping contingencies to ensure we are requesting the maximum award from the grant program**.

Site	Engineering / Install	Boost Charger	5 Year Warranty	L2 Charger	Shipping	Sales Tax	Networking	Commissioning	Total
San Lucas Library	$38,369.32	$162,350.00	$17,567.00	$3,450.00	$7,000.00	$13,853.13	$5,950.00	$1,000.00	$249,539.45
Castroville Library	$49,583.81	$162,350.00	$17,567.00	$3,450.00	$7,000.00	$13,853.13	$5,950.00	$1,000.00	$260,753.94
Greenfield Library	$67,358.33	$162,350.00	$17,567.00	$3,450.00	$7,000.00	$16,981.25	$5,950.00	$1,000.00	$281,656.58
								Total Project	**$791,949.96**
								Estimated Total Funding	**$568,239.17**
								Estimated Net Cost	**$223,710.79**

UPDATED: pricing now includes additional contingency adders for the Installation/Engineering scope, L2 Charger, and Shipping columns to ensure max possible award. Actual costs will be reimbursed by the CEC and the total contingency amounts may not be fully used.

*Pricing is based on 5 Year Warranty for the Boost Charger 150.

**Proposed funding from the California Energy Commission – actual reimbursements will be based on reported costs during the project phase, including warranty costs actually incurred during the 5-year term.

FREEWIRE

FreeWire Boost Specific Quote

County of Monterey - CEC REV Grant 3 Sites - 5 YEAR Warranty

County of Monterey
168 W ALISAL ST
SALINAS, CA 93901
United States

Cora Panturad
Sustainable Infrastructure Analyst
panturadc@co.monterey.ca.us
817-583-1144

Reference: 20220808-190621337
Quote created: August 8, 2022
Quote expires: October 31, 2022
Quote created by: Jordan Baroody
Sales Director, State & Local Gov't
jbaroody@freewiretech.com

Products & Services

Item & Description	Quantity	Unit Price	Total
Boost Charger 150kW Ultrafast EV Charger with Integrated Storage 160kWh capacity, 150kW output Dual-Port CHAdeMO and CCS Combo	3	$135,000.00	$405,000.00
3-Year On-Site Warranty, Maintenance, and Connectivity Limited Warranty for 3 Years - Battery will be replaced within 3 years or 2,000 cycles if Energy Retention falls below 70% - Includes Parts and Workmanship Annual Preventative Maintenance and Over-the-Air Software Updates Proactive Monitoring, Performance Data Analysis & Reporting	3	$27,350.00	$82,050.00
5-yr EV Connect Network Service EV Connect Optimize software for billing drivers and driver support at $1,190K per year, per Boost (both ports included).	3	$5,950.00	$17,850.00
150kW On-Site Warranty Extension to 5 years	3	$17,567.00	$52,701.00

Subtotals

One-time subtotal	$557,601.00

Other Fees

Shipping	$6,000.00
Sales Tax	$42,950.00
Total	**$606,551.00**

Purchase Terms

Per FreeWire MSA.

Example ROI Model for 10 Year Ownership of Combined Locations
(Based on 5 Year Warranty Costs)

Example Utilization - Estimated break even in Year 4

Net Boost Project Cost after funding: $210,893 (excludes L2 charger costs)

Assumes:

Assuming Energy rates of 10 cents/kWh off peak, 15 cents/kWh peak, $15/kW demand charge

2 sessions per day with gradual utilization increase over time

Dwell time 30 mins, 43 cents/kWh revenue, and average 50kW output

Customer Unit Economics

Year	0	1	2	3	4	5	6	7	8	9	10
Boost Charger Installation & Infrastructure	-$210,893										
Warranty, Service, Connectivity & Monitoring	$0	$0	$0	$0	$0	$0	-$12,000	-$12,270	-$12,555	-$12,852	-$13,164
Energy Charges		-$6,844	-$10,950	-$17,794	-$24,638	-$35,588	-$53,381	-$64,331	-$64,331	-$64,331	-$64,331
Demand Charges		-$14,580	-$14,580	-$14,580	-$14,580	-$14,580	-$14,580	-$14,580	-$14,580	-$14,580	-$14,580
Cost of Energy + Demand Charges Per Charging Session		-$9.78	-$7.77	-$6.57	-$5.27	-$4.49	-$4.06	-$4.00	-$4.00	-$4.00	-$4.00
Revenue											
EV Charging Revenue		$23,543	$35,314	$52,971	$80,045	$120,067	$180,100	$211,883	$211,883	$211,883	$211,883
LCFS Credits		$54,185	$54,164	$54,132	$54,083	$54,012	$52,938	$62,280	$62,280	$62,280	$62,280
Cash Flow	-$210,893	$56,304	$63,948	$74,729	$94,910	$123,911	$153,077	$182,982	$182,697	$182,400	$182,088
Boost Cumulative Cash Flow	-$210,893	-$154,590	-$90,642	-$15,913	$78,997	$202,908	$355,985	$538,967	$721,664	$904,063	$1,086,151
Project IRR					5 Year IRR ->	23.54%				10 Year IRR ->	40.34%
					5 Year NPV ->	$202,908					
Breakeven Year	**4**										

ROI Model Notes:

- Model is for 3 Sites, with 1 Boost charger per site
- This calculation is considered an estimate only. Actual returns may change based on pricing, utilization, number of sessions per day, and energy costs for each location.
- Model input excludes the hardware costs of L2 charger, but includes the installation costs to add the L2 to each site.

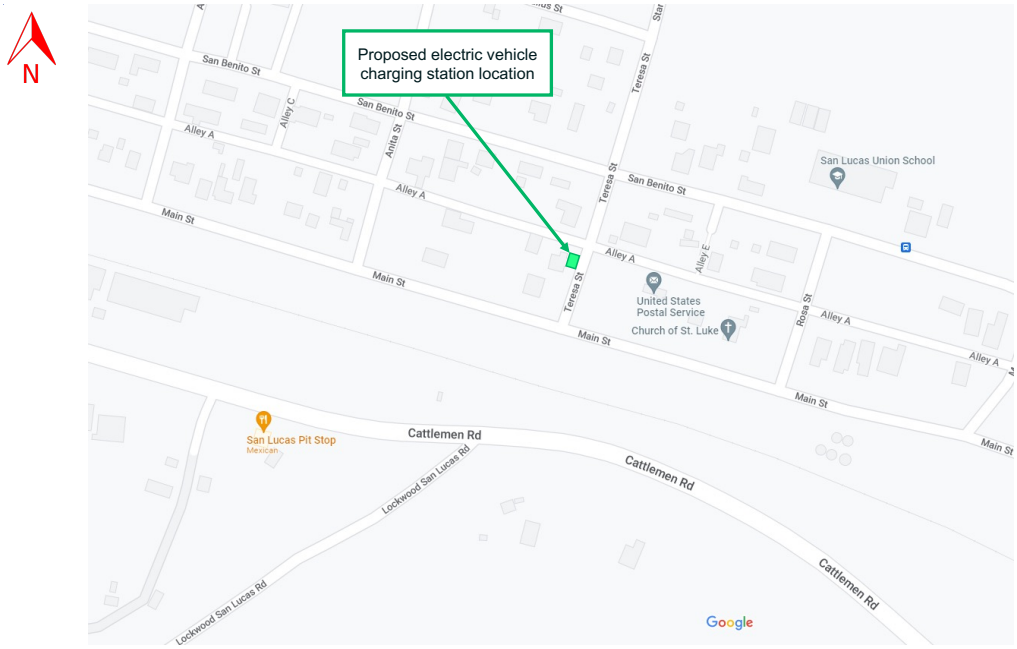
Site Layout and Details

1. Monterey County – San Lucas Branch Library

Project Summary

- Monterey County has requested an estimate for turn-key installation of (1) FreeWire Booster Charger at the 150kW output power level.
- The proposed charging station location is at the San Lucas Branch Library property, at the north end of the existing parking area.
- The existing service may require upgrade to support EV charging infrastructure. There is a 200A 120/240v panel supplying the facility that is mostly full.
- A new ADA aisleway and van accessible ADA parking space would have to be added to adhere to CBC ADA Section 11B-812.
- The recommended infrastructure design solution and accompanying estimate to support the FreeWire Boost charger has been formulated based on site feasibility, capacity, and cost effectiveness.

Site Overview - Map

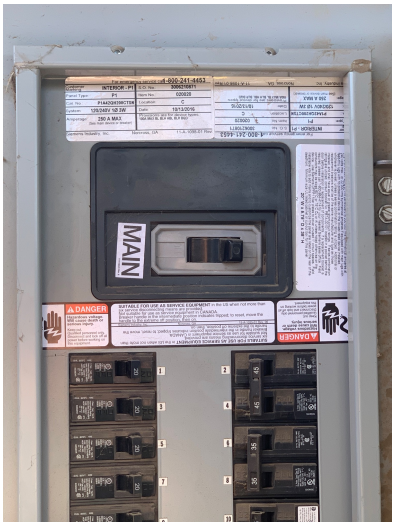


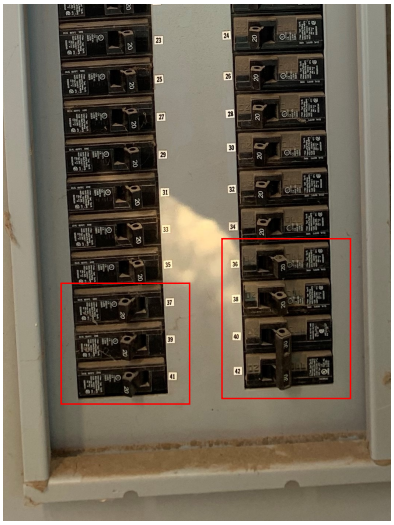
Site Overview - Satellite

Site Layout – Electrical Infrastructure

Site Photos - Electrical

Site Photos - Electrical





San Lucas Library Install Breakdown:

Scope of Work:

Budgetary Installation Estimate for (1) Boost Charger at San Lucas Branch Library (Boost Charger not included)

Equipment Description	Unit Cost	Quantity	Sub Total
208V Three Phase Boost Charger 120 Battery-backed Ultrafast EV Charger 160kWh Capacity, 120kW Output Dual-Port Remote Commissioning	$ 135,000.00	0	$0.00
3-Year On-Site Warranty (Battery, Parts and Workmanship) Proactive Monitoring, Performance Data Analysis & Reporting, Annual Preventative Maintenance and Over the Air Software Updates	$ 27,350.00	0	$0.00
Sales Tax	10.000%		$0.00
Total Equipment Cost			**$0.00**

Electrical Installation Description	Qty
Furnish and Install 2- Pole 125 Amp Circuit Breaker in existing distribution board	1
Furnish and Install (1) 125 Amp branch circuit - (3) #2 THHN & (1) #8 THHN (GRD) 1-1/4" EMT Conduit (Total Footage) OVERHEAD BOOST CHARGER FEED	15
Furnish and Install (1) 125 Amp branch circuit - (4) #2 THHN & (1) #8 THHN (GRD) 1-1/4" PVC Conduit (Total Footage) UNDERGROUND BOOST CHARGER FEED	20
Trench through Grass or Dirt (Per Foot)	20
Install Christy Box (Underground Pull Box)	1
Furnish and Install Concrete Base for BOOST CHARGER	1
Install BOOST Charging Station	1
Fork Lift Rental (Required for BOOST Installation)	1
Furnish and Install Concrete Protective Bollard w/ Foundation	2
Furnish and Install Fused Disconnect Switch at Charging Station	1
Commission and Provision Charging Stations	1
Installation Material Cost	$6,054.32
Installation Labor Cost	$10,982.00
Total Electrical Installation Cost (Includes Sales Tax)	**$17,036.32**

Total Cost Summary	Cost
Total Equipment Cost	$0.00
Total Electrical Installation Cost	$17,036.32
Design Package, Plan Check, Permit Fees	Excluded
Grand Total	**$17,036.32**

ASSUMPTIONS:

Budgetary estimate only. Subject to engineering design review and approval by the AHJ. Add-in infrastructure cost for 7.2kW L2 EVCS approx $5000.00 - L2 EVCS not included.

San Lucas Install Summary:

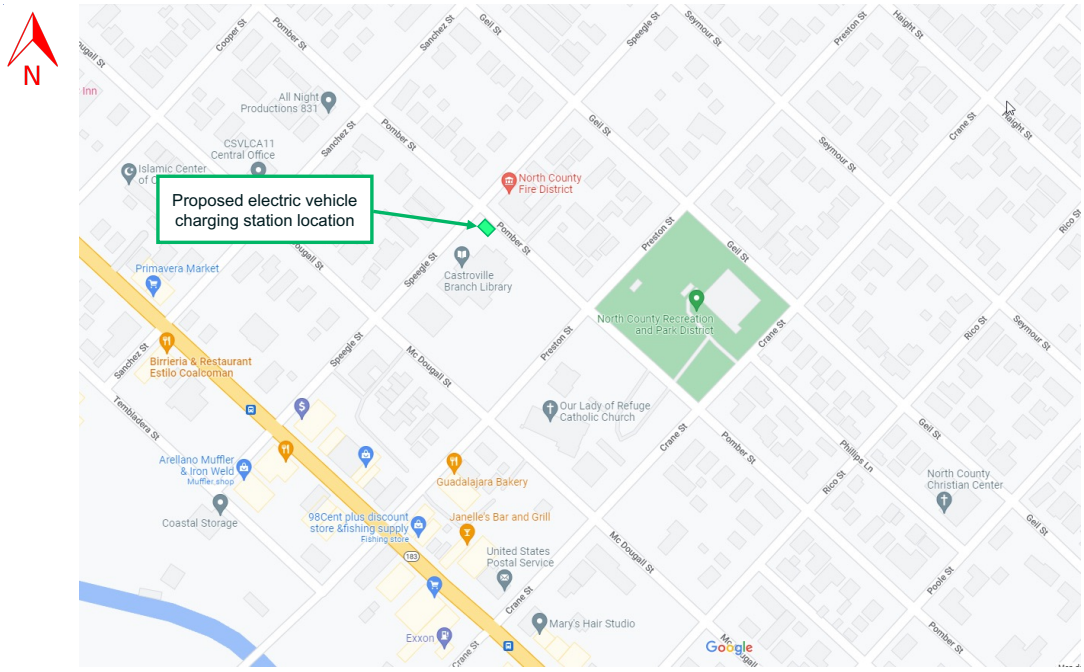
Subtotal	$17,036.32
Engineering adder	$5,000
L2 Install adder	$5,000
Landscaping coordination adder	$5,000
Additional contingency	$6,333
Estimated Total with contingencies	**$38,369.32**

2. Monterey County – Castroville Library

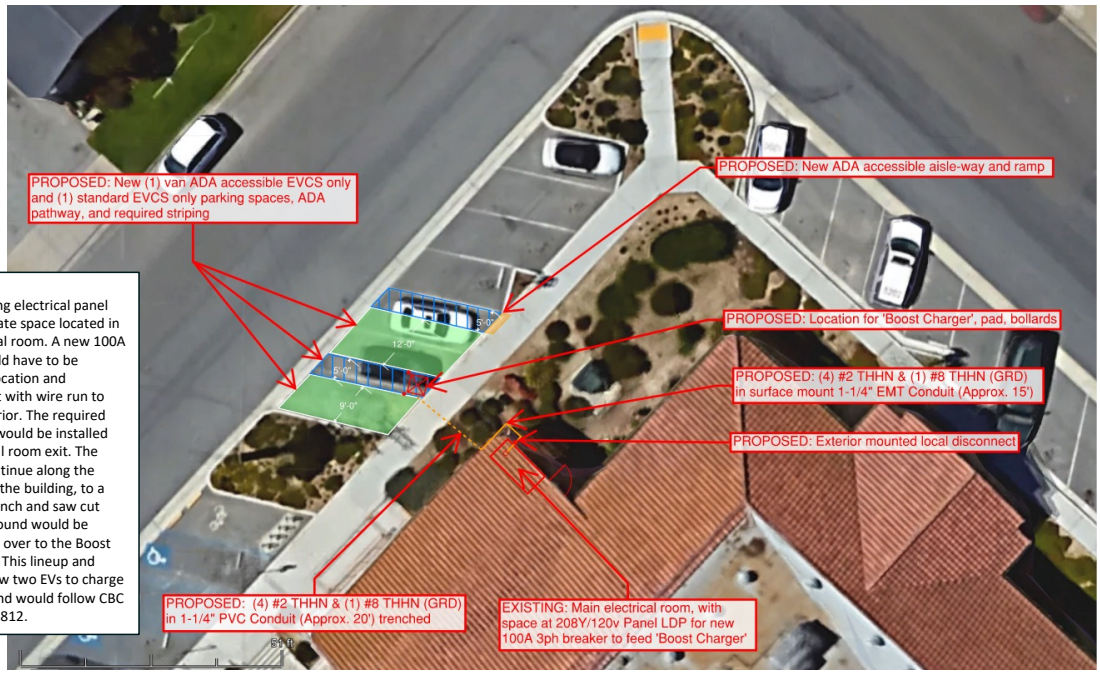
Project Summary

- Monterey County has requested an estimate for turn-key installation of (1) FreeWire Booster Charger at the 150kW output power level.
- The proposed charging station location is at the northern corner of the Castroville Library property, northeast of the facility main entrance and existing ADA parking area.
- The potential location is well suited to EV charging. There is adequate space and capacity for the required electrical equipment and load of the new Boost Charger. New ADA aisleways and a ramp would have to be added to adhere to CBC ADA Section 11B-812.
- The recommended infrastructure design solution and accompanying estimate to support the FreeWire Boost charger has been formulated based on site feasibility, capacity, and cost effectiveness.

Site Overview - Map



Site Layout – Electrical Infrastructure



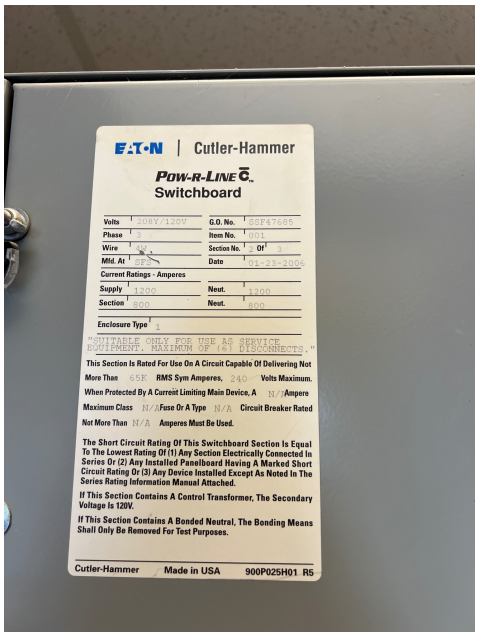
Summary:
There is an existing electrical panel 'LDP' with adequate space located in the main electrical room. A new 100A 3ph breaker would have to be installed at this location and overhead conduit with wire run to the building exterior. The required local disconnect would be installed near the electrical room exit. The feeder would continue along the lower exterior of the building, to a point where a trench and saw cut opening underground would be required to route over to the Boost Charger location. This lineup and layout would allow two EVs to charge simultaneously and would follow CBC ADA Section 11B-812.

Site Overview - Satellite

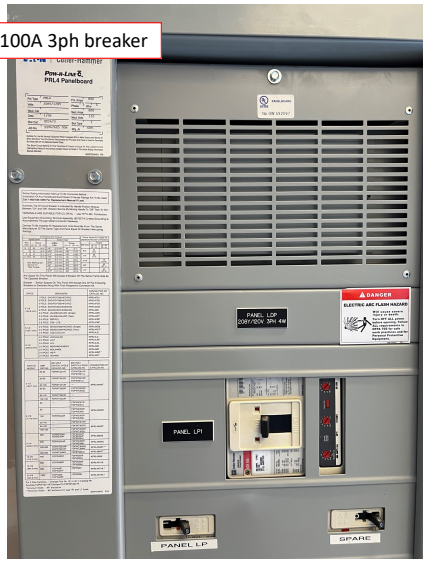
Site Photos

Site Photos

Site Photos - Electrical



Site Photos - Electrical



Scope of Work:			
Budgetary Installation Estimate for (1) Boost Charger at Castroville Library (Boost Charger not included)			
Equipment Description	**Unit Cost**	**Quantity**	**Sub Total**
208V Three Phase Boost Charger 120 Battery-backed Ultrafast EV Charger 160kWh Capacity, 120kW Output Dual-Port Remote Commissioning	$ 135,000.00	0	$0.00
3-Year On-Site Warranty (Battery, Parts and Workmanship) Proactive Monitoring, Performance Data Analysis & Reporting, Annual Preventative Maintenance and Over the Air Software Updates	$ 27,350.00	0	$0.00
Sales Tax	10.000%		$0.00
Total Equipment Cost			**$0.00**

Electrical Installation Description	Qty
Furnish and Install 3- Pole 100 Amp Circuit Breaker in existing distribution board	1
Furnish and Install (1) 100 Amp branch circuit - (4) #2 THHN & (1) #8 THHN (GRD) 1-1/4" EMT Conduit (Total Footage) OVERHEAD BOOST CHARGER FEED	15
Furnish and Install (1) 100 Amp branch circuit - (4) #2 THHN & (1) #8 THHN (GRD) 1-1/4" PVC Conduit (Total Footage) UNDERGROUND BOOST CHARGER FEED	20
Trench through landscaping - obstructed - (Per Foot)	10
Saw Cut and patch Concrete (Per Foot)	15
Install Christy Box	1
Furnish and Install Concrete Base BOOST	1
Install BOOST Charging Station	1
Fork Lift Rental (Required for BOOST Installation)	1
Furnish and Install Concrete Protective Bollard w/ Foundation	2
*Core Wall [Concrete] holes up to 2" in diameter	1
Furnish and Install Fused Disconnect Switch at Charging Station	1
Commission and Provision Charging Stations	1
Stripe E.V. Parking Spots with EV Logo and Hashing	1.5
Modify Concrete Sidewalk for ADA access - Ramp etc.	1
Furnish and Install 6' post with signage	2
Installation Material Cost	$7,505.54
Installation Labor Cost	$25,745.27
Total Electrical Installation Cost (Includes Sales Tax)	**$33,250.81**

Total Cost Summary	Cost
Total Equipment Cost	$0.00
Total Electrical Installation Cost	$33,250.81
Design Package, Plan Check, Permit Fees	Excluded
Grand Total	**$33,250.81**

ASSUMPTIONS:

Budgetary estimate only. Subject to engineering design review and approval by the AHJ. Add-in infrastructure cost for 7.2kW L2 EVCS approx $5000.00 - L2 EVCS not included.

Castroville Install Summary:

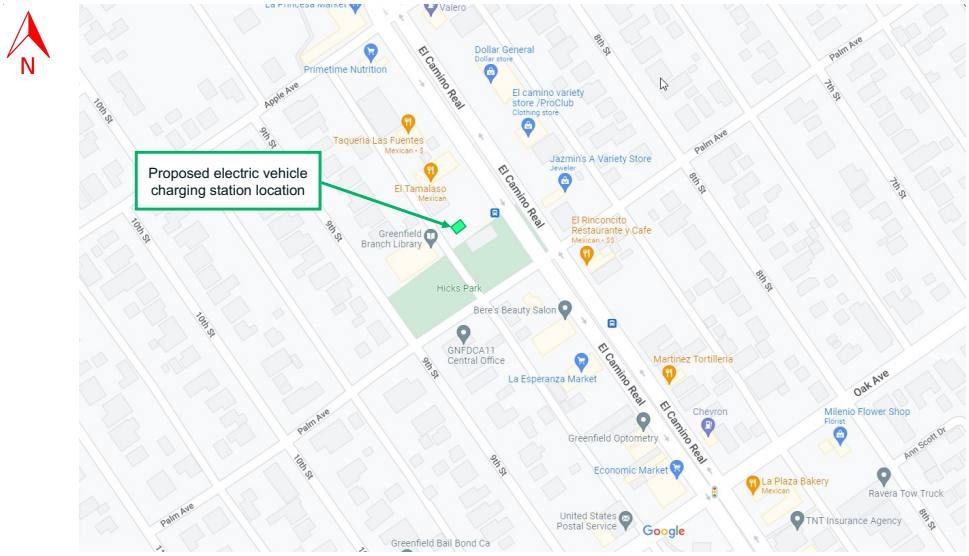
Subtotal	$33,250.81
Engineering adder	$5,000
L2 Install adder	$5,000
Additional contingency	$6,333
Estimated Total with contingencies	**$49,583.81**

3. Monterey County - Greenfield Branch Library

Project Summary

- Monterey County has requested an estimate for turn-key installation of (1) FreeWire Booster Charger at the 150kW output power level.
- The proposed charging station location is in the middle parking area of the Greenfield Branch Library property, northeast of the facility main entrance and existing ADA parking area.
- The potential location is well suited to EV charging. There is adequate space and capacity for the required electrical equipment and load of the new Boost Charger. One existing parking spot would have to be widened, and a new ADA aisleway and a ramp would have to be added to adhere to CBC ADA Section 11B-812.
- The recommended infrastructure design solution and accompanying estimate to support the FreeWire Boost charger has been formulated based on site feasibility, capacity, and cost effectiveness.

Site Overview - Map

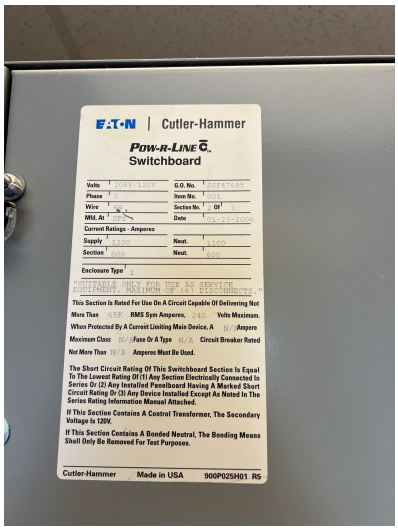


Site Overview - Satellite

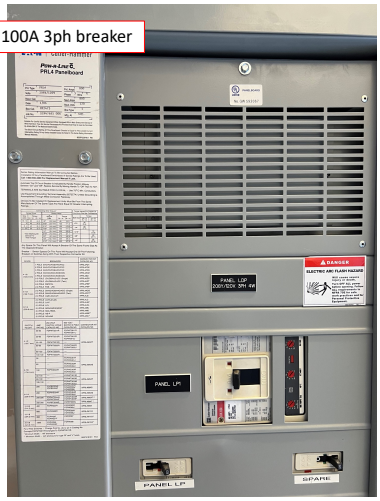
Site Layout – Electrical Infrastructure

Summary:
There is an existing 208Y/120v main electrical panel with adequate space located in on the exterior of the facility, at the northwest corner. A new 100A 3ph breaker would have to be installed at this location and overhead conduit with wire run to the into the disposal area. The feeder would continue via a trench and saw cut opening underground over to the Boost Charger location. One parking space would require modification to widen and allow for ADA van parking, and an additional ADA pathway and ramp would also have to be added. This lineup and layout would allow two EVs to charge simultaneously and would follow CBC ADA Section 11B-812.

Site Photos - Electrical



Site Photos - Electrical



Greenfield Install Breakdown

Scope of Work:

Budgetary Installation Estimate for (1) Boost Charger at Greenfield Branch Library (Boost Charger not included)

Equipment Description	Unit Cost	Quantity	Sub Total
208V Three Phase Boost Charger 120 Battery-backed Ultrafast EV Charger 160kWh Capacity, 120kW Output Dual-Port Remote Commissioning	$ 135,000.00	0	$0.00
3-Year On-Site Warranty (Battery, Parts and Workmanship) Proactive Monitoring, Performance Data Analysis & Reporting, Annual Preventative Maintenance and Over the Air Software Updates	$ 27,350.00	0	$0.00
Sales Tax	10.000%		$0.00
Total Equipment Cost			**$0.00**

Electrical Installation Description	Qty
Furnish and Install 3- Pole 100 Amp Circuit Breaker in existing distribution board	1
Furnish and Install (1) 100 Amp branch circuit - (4) #2 THHN & (1) #8 THHN (GRD) 1-1/4" EMT Conduit (Total Footage) OVERHEAD BOOST CHARGER FEED	15
Furnish and Install (1) 100 Amp branch circuit - (4) #2 THHN & (1) #8 THHN (GRD) 1-1/4" PVC Conduit (Total Footage) UNDERGROUND BOOST CHARGER FEED	100
Saw Cut and patch Concrete & Asphalt (Per Foot)	100
Install Christy Box	1
Furnish and Install Concrete Base BOOST	1
Install BOOST Charging Station	1
Fork Lift Rental (Required for BOOST Installation)	1
Furnish and Install Concrete Protective Bollard w/ Foundation	2
*Core Wall [Concrete] holes up to 2" in diameter	1
Furnish and Install Fused Disconnect Switch at Charging Station	1
Commission and Provision Charging Stations	1
Installation Material Cost	$12,263.04
Installation Labor Cost	$36,762.29
Total Electrical Installation Cost (Includes Sales Tax)	**$49,025.32**

Total Cost Summary	Cost
Total Equipment Cost	$0.00
Total Electrical Installation Cost	$49,025.32
Design Package, Plan Check, Permit Fees	Excluded
Grand Total	**$49,025.32**

ASSUMPTIONS:

Budgetary estimate only. Subject to engineering design review and approval by the AHJ. Add-in infrastructure cost for 7.2kW L2 EVCS approx $7000.00 - L2 EVCS not included.

Greenfield Install Summary:

Subtotal	$49,025.32
Engineering adder	$5,000
L2 Install adder	$7,000
Additional contingency	$6,333
Estimated Total with contingencies	**$67,358.33**